State of New Jersey
Department of Environmental Protection and Energy
Division of Responsible Party Site Remediation
CN 028
Trenton, NJ 08625-0028

Scott A. Weiner
Commissioner

Karl J. Delaney
Director

CERTIFIED MAIL
RETURN RECEIPT REQUESTED
NO. P 642 608 915

22 SEP 1992

Cristopher Anderson
Director of Environmental Affairs
L. E. Carpenter & Company
1301 East Ninth Street
Suite 3600
Cleveland, OH 44144

Re: L. E. Carpenter Site
Wharton Borough, Morris County
USEPA's Comments on the Final Feasibility Study

1. **Cultural Resources**

USEPA is currently reviewing the Stage IA Cultural Resource Survey (CRS). It is not known at this time which areas of contamination will be excavated. It would be helpful to USEPA's analysis if the information is provided as soon as it becomes available, in order to correlate it with the location of the areas of potential cultural resource sensitivity and determine if a stage IB CRS will be necessary.

2. **Floodplain**

The implications of the floodplain delineation for the various remedial alternatives was not explored in the FS. At this time, Executive Order 11988 (Floodplain Management) remains an unresolved ARAR.

3. **Significant Agricultural Resources**

Based on the information provided in the FS regarding the irrigation wells in the site vicinity, the Farmland Protection Policy Act is considered to be a resolved ARAR.

4. **RCRA**

The recommended alternatives for remediation of the site include soil cover for bis-2-ethyl hexyl phthalate (DEHP) contaminated soils, excavation, floating layer recovery, and groundwater treatment followed by surface water discharge. Enhanced biological treatment of extracted groundwater for soil flushing is also being considered as an option. The addition of surfactant and nutrients to enhance the soil flushing and biodegradation process is being considered as part of this alternative. RCRA standards pertaining to the recommended alternative are as follows:

a. Due to the presence of spent solvents in the soil and groundwater, RCRA Subpart X standards are applicable to the soil/flushing biological treatment system being proposed for treating the soil and groundwater. These standards are meant to ensure that the system is operated in a manner that protects human health and the environment.

b. Due to the presence of RCRA listed spent solvents and/or toxicity characteristics compounds above the threshold limit, RCRA Subpart N landfill and Subpart G closure standards are applicable to the soil cover for DEHP contaminated soils. The cover should be designed to accommodate settling and subsidence and have a permeability less than or equal to the permeability of the liner or natural sub-soils present. In order to meet these performance specification, guidance for the design of a final cover is available from the EPA guidance document entitled "Landfill Design, Liner Systems and Final Cover," dated July 1982.

c. RCRA Land Disposal Restriction (LDR) may be applicable to the disposal of displaced soil, floating product layer, or groundwater depending upon whether hazardous waste is present in these media. Treatment of the contaminated media should ensure levels of contaminants are below RCRA Land Disposal Restriction Best Demonstrated Available Technology (BDAT) standards listed in 40 CFR 268.43.

d. In accordance with OSWER Directive 9234.1-06 (attached) health based drinking water standards (MCLs) take precedence over BDAT standards listed in the RCRA Land Disposal Restrictions (40 CFR Part 268) when determining applicable treatment standards to groundwater being reinjected. RCRA standards may be applicable to the sludge derived from treatment of the groundwater. As such, sludge derived from treatment of the groundwater should be tested using TCLP. The sludge should be sent to a facility in compliance with OSWER Off-Site Policy Number 9834.11 if found to be hazardous.

e. RCRA Part 263 standards are applicable to the shipment off-site of hazardous materials for disposal. Part 263 standards specify manifesting procedures, transport

and record keeping requirements. The material should be sent to a facility in compliance with OSWER Off-Site Policy Directive Number 9834.11.

5. **Air Emissions**

a. Additional potential ARARs were forwarded by the USEPA and are attached.

6. **Ground water**

a. USEPA noted the second round of sampling (1/25/90) revealed BNA contamination in MW-11d. USEPA writes " this may represent a migrating contamination in MW-11d, and this may represent a migrating bedrock plume since this well is down gradient to the shallow zone plume." Consequently, USEPA advises that a contingency be included should future sampling result in detections of contaminants in the bedrock wells. Additional intermediate zone monitoring wells should be installed in the intermediate zone between the MW-11 cluster and the MW-14 cluster. Additional sampling of selected wells should be undertaken to determine the extent of vertical plume migration since the 1/25/90 sampling event.

b. 6.2.1.1 Development of the Initial Groundwater Collection System, page 5-9
6.2.2.1 Description of Institutional Controls) Alternative, page 6-8

Phthalates, total organic carbon (TOC), and biochemical oxygen demand (BOD) must be included in the parameters when discussing EPA Method 602.

c. 4.3.7.2 Anaerobic Biological Treatment, page 4-37, first paragraph

Carbon monoxide should be changed to *carbon dioxide*; *soluble organics* should be changed to *hydrogen gas, organic acids, alcohols, and amines.*

These comments along with the Department's comments will be discussed during our meeting of October 1, 1992. If you should have any questions, please feel free to call me at (609) 633-1455. Thank you for your continuing cooperation.

Sincerely,

Christina H. Purcell, Case Manager
Bureau of Federal Case Management

cc: Martin O'Neill, Roy F, Weston, Inc.
Jonathan Josephs, USEPA
John Prendergast, BEERA
George Blyskun, BGWPA

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

DEC 27 1989

OFFICE OF
SOLID WASTE AND EMERGENCY RESPONS

OSWER Directive # 9234.1-06

MEMORANDUM

SUBJECT: Applicability of Land Disposal Restrictions to RCRA and CERCLA Ground Water Treatment Reinjection Superfund Management Review: Recommendation No. 26

FROM: Don R. Clay, Assistant Administrator
Office of Solid Waste and Emergency Response

TO: Waste Management Division Directors
Regions I - X

Regional Counsel
Regions I - X

Purpose

There has been some question as to whether ground water contaminated with restricted RCRA hazardous wastes, which is extracted during a RCRA corrective action or CERCLA response action, must meet the best demonstrated available technology (BDAT) identified for that waste under the RCRA land disposal restrictions (LDRs) prior to each reinjection, in a pump-and-treat reinjection remediation system. (See RCRA sections 3004 (f), (g) and (m), and 40 C.F.R. Parts 148 and 268.) This memorandum explains EPA's interpretation of whether the LDRs are applicable or (under CERCLA response actions only) relevant and appropriate to such reinjections or to the remediation as a whole.

Background

RCRA LDRs prohibit land disposal of restricted RCRA hazardous wastes that do not meet treatment standards after the effective date of the restrictions. Treatment standards for RCRA hazardous wastes are based upon the best demonstrated available technology (BDAT) identified for that waste. See 40 C.F.R. 268. Because placement of hazardous waste into underground injection wells constitutes "land disposal" under LDR (see RCRA section 3004(k)), and the ground water undergoing reinjection may contain a restricted waste, the issue has been raised as to whether each reinjection of contaminated ground water should meet BDAT during response or corrective actions.

RATIONALE

Ground water restoration under RCRA corrective actions and CERCLA response actions often involves withdrawal, treatment of the contaminated water, and reinjection of the treated water into the ground. The land disposal restrictions (LDR) of the Resource Conservation and Recovery Act (RCRA) prohibit land disposal of restricted RCRA hazardous wastes that do not meet treatment standards after the effective date of the restrictions. Treatment standards for RCRA hazardous wastes are based upon the best demonstrated available technology (BDAT) identified for that waste. See 40 C.F.R. 268. Because placement of hazardous waste into underground injection wells constitutes "land disposal" under LDR (see RCRA section 3004(k)), and the ground water undergoing reinjection may contain a restricted waste, the issue has been raised as to whether each reinjection of contaminated ground water should meet BDAT during response or corrective actions.[1]

Section 3020 of RCRA [previously section 7010[2]] specifically addresses waste injection in the context of CERCLA and RCRA cleanups. RCRA section 3020(a) bans hazardous waste disposal by underground injection into or above an underground source of drinking water (within one-quarter mile of the well). However, RCRA section 3020(b) exempts from the ban all reinjections of treated contaminated ground water into such formations undertaken as part of a CERCLA section 104 or 106 response action, or a RCRA corrective action. To qualify for the exemption, the following three conditions must be met: (1) the injection is a CERCLA response action or a RCRA corrective action, (2) the contaminated ground water must be treated to substantially reduce hazardous constituents prior to such injection, and (3) the response action or corrective action must be sufficient to protect human health and the environment upon completion.

Although RCRA section 3020 and the LDR provisions at RCRA sections 3004(f), (g) and (m) arguably can address the same activity, RCRA section 3020 specifically applies to all CERCLA and

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[1] CERCLA remedial actions are required to meet Federal requirements and standards at completion of the remedial action if the Federal standards are applicable or relevant and appropriate requirements (ARARs), absent invocation of a statutory waiver. See CERCLA section 121(d). Agency policy and the proposed National Contingency Plan (NCP) require the Agency to comply with all ARARs pertinent to the action during the course of a remedial action, as well as upon its completion. See the proposed NCP (published at 53 Fed. Reg. 51,394 (Dec. 21, 1988)(to be codified at 40 C.F.R. 300.435(b)(2)), and CERCLA Compliance with Other Laws Manual: Part I, I-8 (OSWER Directive number 9234.1-01, August 8, 1988).

[2] RCRA section 3020 was section 7010 in the Hazardous and Solid Waste Amendments of 1984, but was re-numbered in 1986.

RCRA ground water treatment reinjections into Class IV injection wells.[3] Consistent with traditional principles of statutory construction, RCRA section 3020 -- which is directly focused on injections of treated contaminated ground water into Class IV wells during cleanups -- should be controlling for such injections; a contrary reading would render section 3020(b) meaningless. Where Congress has provided two potentially applicable statutory provisions, a choice between them is both necessary and appropriate, and within the discretion of the expert agency. Accordingly, EPA construes the provisions of RCRA section 3020 to be applicable instead of LDR provisions at RCRA sections 3004(f), (g), and (m), to reinjections of contaminated ground water into an underground source of drinking water (USDW), which are part of a CERCLA response action or RCRA corrective action.

As a result, the three conditions of RCRA section 3020(b) must be met during response or corrective actions involving ground water treatment reinjection into or above underground sources of drinking water. Failure to meet these conditions bans the activity under RCRA section 3020(a).[4] First, the injections must be part of a CERCLA response action or a RCRA corrective action. Second, each reinjection has to be treated to "substantially reduce hazardous constituents prior to such injection..." (RCRA section 3020(b)). Until guidance is prepared addressing the issue, steps necessary to "substantially reduce" hazardous constituents during a RCRA corrective action or a CERCLA response action should be decided on a case-by-case basis. Third, the response or corrective action upon completion must "be sufficient to protect human health and the environment" (RCRA section 3020(b)). RCRA and CERCLA statutes, regulations and policies should be reviewed to determine protectiveness.

The issue may also arise under CERCLA as to whether LDRs are relevant and appropriate requirements when treated ground water is reinjected into Class IV wells as part of a CERCLA response action. In order to be considered to be both "relevant" and "appropriate," a requirement must address problems or situations similar to the circumstances of the release or remedial action contemplated, and be well-suited to the site. A key factor in determining the potential relevance and appropriateness of a

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[3] Class IV injection wells are used to inject contaminated ground water into or above an underground source of drinking water. See 40 C.F.R. 146.5(d). In most situations, ground water treatment reinjection involves only Class IV injection wells because treated ground water is recharged back into an underground source of drinking water (USDW) during pump-and-treat activities, not beneath it. Other classes of wells are not subject to section 3020's special provisions.

[4] Note, however, that an ARARs waiver may be appropriate in certain cases for actions taken under CERCLA.

requirement is to compare the CERCLA response objective with the purpose and objective of the requirement. See "CERCLA Compliance with Other Laws Manual" at p. 1-65 (EPA, August 8, 1988); proposed NCP, 53 FR at 51436 (Dec. 21, 1988) (proposed section 300.400(g)(2)).

The ultimate purpose of treating and reinjecting ground water into Class IV wells is to restore the formation to drinking water quality. EPA believes that standards that have been specifically developed to establish drinking water quality levels (such as MCLs[5]) are particularly well-suited to the accomplishment of that purpose. Although LDRs also prescribe treatment levels, those levels were not specifically developed to achieve drinking water quality (although they may often have that result). Thus, where drinking water standards are available, the Agency believes that they will generally be the relevant and appropriate requirement to use in setting treatment standards for CERCLA cleanups of drinking water formations.

In situations where no drinking water standard has been promulgated for the contaminants to be treated, the Region should consider potentially relevant and appropriate requirements (including any available health-based standards, LDR treatment standards, etc.) and attain the standard, if any, that the Agency finds is "relevant and appropriate under the circumstances of the release" (or justify a waiver).[6] EPA guidance sets out a number of factors for deciding if a requirement is relevant and appropriate under the circumstances of the release. See CERCLA Compliance with Other Laws Manual, at p. 1-67.

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NOTICE: The policies set out in this memorandum are intended solely for the guidance of Government personnel. They are not intended, nor can they be relied upon, to create any rights enforceable by any party in litigation with the United States. EPA officials may decide to follow the guidance provided in this memorandum, or to act at variance with the guidance, based on an analysis of specific site circumstances. The Agency also reserves the right to change this guidance at any time without public notice.
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[5] See the discussion of MCLs and MCLGs in the proposed and final NCP.

[6] If no such standards are relevant and appropriate, TBCs may be used as cleanup levels; use of a TBC should be explained and justified for each specific case.

Separate from the restrictions found in RCRA LDRs, an independent provision of the statute, RCRA Section 3020, bans hazardous waste injection into drinking water formations (Class IV injection wells), unless the conditions in subpart (b) are met. Subpart (b) permits reinjection of contaminated ground water that has been treated if: (1) the injection is a CERCLA response action or a RCRA corrective action, (2) the contaminated ground water is treated to substantially reduce hazardous constituents prior to each injection, and (3) the response action or corrective action is sufficient to protect human health and the environment upon completion. (See RCRA section 3020(b).)

Resolution

For the reasons specified in the attachment to this memorandum, LDR is not applicable to these activities. Instead of LDR, RCRA section 3020 applies to reinjection of treated contaminated ground water into Class IV injection wells during CERCLA response actions or RCRA corrective actions. Moreover, for CERCLA response actions where the goal is to clean up ground water to drinking water levels, the Agency believes that health-based drinking water standards (e.g. MCLs) -- rather than LDRs -- will generally be the relevant and appropriate cleanup standard. See the attachment.

Until guidance addresses the issue, what is required to "substantially reduce" hazardous constituents prior to each injection in a CERCLA response action or RCRA corrective action should be determined on a case-by-case basis. RCRA and CERCLA program policies and guidance should be reviewed to determine protectiveness upon completion of the action.

Attachment

cc: CERCLA and RCRA Branch Chiefs
Office of Drinking Water

General ARARs

40 CFR 50 National Ambient Air Quality Standards

§50.4 Sulfur Oxides

(a) 80 micrograms per cubic meter ($\mu g/m^3$) or 0.03 parts per million (ppm) annual arithmetic mean.

(b) 365 $\mu g/m^3$ (0.14 ppm) maximum 24 hour concentration not to be exceeded more than once per year.

§50.6 Particulate Matter

(a) 150 $\mu g/m^3$ for a 24 hour average concentration.

(b) 50 $\mu g/m^3$ for an annual arithmetic mean.

§50.8 Carbon Monoxide

(a) 1. For an eight hour averaging period the ambient concentration is not to exceed 10 milligrams per cubic meter (mg/m^3) (9 ppm) more than once a year.

2. For a 1 hour averaging period the ambient concentration is not to exceed 35 ppm (40 mg/m^3) more than once a year.

§50.9 Ozone

(a) Ambient concentrations are not to exceed 0.12 ppm (235 $\mu g/m^3$).

§50.11 Nitrogen dioxide

(a) Ambient concentrations are not to exceed 0.053 ppm (100 $\mu g/m^3$) for an annual arithmetic.

§50.12 Lead

Ambient concentrations are not to exceed 1.5 $\mu g/m^3$ for a calendar quarter arthmetic mean.

NJAC 7:27-13

13.3 Ambient air quality standards for suspended particulate matter

(a) Primary standards

1. During any 12-consecutive months, the geometric mean value of all 24-hour averages shall not exceed 75 $\mu g/m^3$; and

2. In any 12-consecutive months, 24-hour average concentrations may exceed 260 $\mu g/m^3$ no more than once.

13.4 Ambient air quality standards for sulfur dioxide

(a) Primary standards

1. During any 12-consecutive months, the arithmetic mean concentration of sulfur dioxide in ambient air shall not exceed 80 $\mu g/m^3$ (0.03 ppm); and

2. During any 12-consecutive months, 24-hour average concentrations may exceed 365 $\mu g/m^3$ (0.14 ppm) no more than once.

13.5 Ambient air quality standards for carbon monoxide

(a) Primary and secondary standards

1. During any 12-consecutive months, eight-hour average concentrations of carbon monoxide in ambient air may exceed 10 mg/m_3 no more than once; and

2. During any 12-consecutive months, one-hour average concentrations may exceed 40 mg/m^3 (35 ppm) no more than once.

13.6 Ambient air quality standards for ozone

(a) Primary standard

1. During any 12-consecutive months, daily maximum one-hour concentrations may exceed 0.12 ppm (235 $\mu g/m^3$) no more than once.

13.7 Ambient air quality standards for lead

(a) Primary and secondary standards

1. In any three consecutive months, the arithmetic mean of 24-hour averages shall not exceed 1.5 $\mu g/m^3$.

13.8 Ambient air quality standards for nitrogen dioxide

(a) Primary and secondary standards

1. In any 12 consecutive months, the arithmetic mean concentration shall not exceed 100 $\mu g/m^3$ (0.05 ppm).

NJAC 7:27-5

5.1 Definitions

Air pollution means the presence in the outdoor atmosphere of one or more contaminants in such quantities or duration as are, or tend to be, injurious to human health or welfare, animal or plant life or property, or would unreasonably interfere with the enjoyment of life or property throughout the State and in such territories of the State as shall be affected thereby and excludes all aspects of employer-employee relationship as to health and safety.

5.2 General provisions

(a) No person shall cause, suffer, allow or permit to be emitted into the outdoor atmosphere substances in quantities which shall result in air pollution.

Excavation and Fugitve Dust ARARs

40 CFR 264 RCRA Standards

§264.251 Design and operating requirements.

(f) If any hazardous waste pile contains particulate matter which may be subject to wind dispersal, the owner or operator must cover or otherwise manage the pile to control wind dispersal.

§264.254 Monitoring and Inspection

(a) During construction or installation cover systems must be inspected for uniformity, damage, and imperfections (e.g., holes, cracks, thin spots, or foreign materials). Immediately after construciton or installation:

(1) Synthetic covers must be inspected to ensure tight seams and joints and the absence of tears, punctures, or blisters.

(b) While a waste pile is in operation, it must be inspected weekly and after storms to detect evidence of:

(2) Proper functioning of wind dispersal control systems.

Subpart N - Landfills

§264.301 Design and operating requirements

(i) If the landfill contains any particulate matter which may be subject to wind dispersal, the owner or operator must cover or otherwise manage the landfill to control wind disperal.

To Be Considered:

Commonwealth of Puerto Rico Environmental Quality Board Regulation

Rule 404: Fugitive Dust

A) No person shall cause or permit any materials to be handled, transported, or stored without taking reasonable precautions to prevent particulate matter from becoming airborne. Such reasonable precautions shall include, but not be limited to, the following:

1. The use of water or suitable chemicals for the control of dust in the demolition of existing buildings, construction operations, the grading of roads or the clearing of land;

2. The application of asphalt, water, or suitable chemicals on dirt roads or roads under construction, materials, stockpiles, and other surfaces which can give rise to airborne dust;

4. The covering, at all times when in motion, of open bodied trucks transporting materials likely to give rise to airborne dust;

B) No person shall cause or permit the discharge of visible emissions of fugitive dust beyond the boundary line of the

property on which the emissions originate.

VOC ARARs

NJAC 7:27-16 Control and Prohibition of Air Pollution by Volatile Organic Substances

16.6 Source operations other than storage tanks, transfers, open top tanks, surface cleaners, surface coaters, and graphic arts operations

(a) No person shall cause, suffer, allow, or permit volatile organic substances (VOS) to be emitted into the outdoor atmosphere from any source operation in excess of the maximum allowable emission rate as determined in accordance with the procedure for using Table 4 (see the regulation for the procedure and for Tables 4 and 5).

NJAC 7:27-17 Control and Prohibition of Air Pollution by Toxic Substances

17.3 Storage, transfer, an use of toxic volatile organic substances

(b) In cases where the NJDEP or EPA determines that the equipment oroperating procedures as described i the Remedial Design do not represent advances in the art of control for the types and kind of TVOS emitted, The NJDEP or EPA will so notify the affected persons.

17.4 Discharge of Toxic Volatile Organic Substances

(a) No person shall cause, suffer, allow or permit any TVOS to be emitted from any source operation into the outdoor atmosphere unless such discharge is:

1. No less than 40 feet above grade; and
2. No less than 20 feet higher than any area of human use or occupancy within 50 feet; and
3. Directed vertically upward at a discharge velocity of 3600 feet per minute or greater.

(b) No person shall cause, suffer, allow or permit the emission of a TVOSinto the outdoor atmosphere from asystem equipment, or control apparatus not approved by the NJDEP or EPA as being effective in preventing aerodynamic downwash.